Be Your BEST
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Science: PROPERTIES AND CHANGE OF MATERIALS

Years 5

What do I already know?

- Materials can be divided into **solids**, **liquids** and **gases**.
- Some materials can change from one state and back again.
- **Heating** causes some **solids** to **melt** into liquids and liquids to evaporate into gases.
- Cooling causes gases to condense into liquids and some liquids to freeze into solids.
- Temperature is measured in 0°C.

What will be my new knowledge?

- compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets
- know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution
- use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through **filtering, sieving and evaporating**
- give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic
- demonstrate that dissolving, mixing and changes of state are **reversible** changes
- explain that some changes result in the formation of new materials, and that this kind of change is not usually **reversible**, including changes associated with burning and the action of acid on bicarbonate of soda.







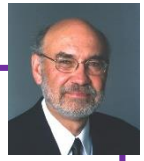




Notable Scientists



Stephanie Kwolek (1923-2014) Inventing Kevlar (bullet-proof material)



Spencer Silver (1941-2021) Co-inventor of the post it note.



Arthur Fry (1931-present) Co-inventor of the post it note.

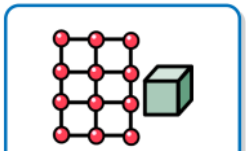
Key Vocabulary

Word	Definition	Visual
solid	A substance that holds its shape because of tightly packed together particles.	
liquid	A substance that flows and fills the shape of a container.	
gas	A substance without a fixed shape or volume and will always fill a container.	
mixture	Combining two or more substances which don't completely dissolve.	
solution	When one substance is completely dissolved in another,	
soluble	A substance that can be dissolved into a solvent (usually water).	
conduction	The transfer of energy (heat) through the movement of particles in contact with each other.	
magnetism	A force exerted by magnets when they attract or repel each other.	
filtration	The process which separates solid particles from a liquid.	
sieving	The process which separates insoluble solid particles from a liquid.	
evaporation	The process which turns a liquid into a gas by heating it.	
transparent	A material which allows light to pass through it so objects can be seen.	
translucent	A material which allows some light to pass through it but objects will not be clearly visible.	
opaque	A material which does not allow light to pass through it.	
attract	If one object attracts another, it causes the second object to move towards it.	
repel	To give out a force that pushes the other pole away.	
reversible	When materials can be changed back to how they were before the reaction took place.	
irreversible	When materials cannot be changed back to how they were before the reaction took place.	

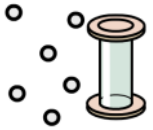
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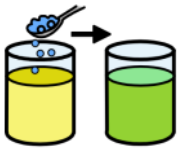
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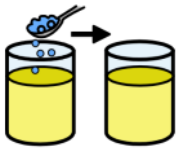

solid


liquid


gas


mixture


solution


soluble


conduction


magnetism


filtration

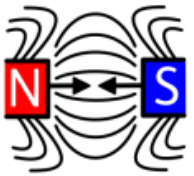

sieving


evaporation


transparent


translucent


opaque


attract


repel

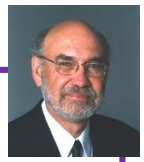

reversible


irreversible

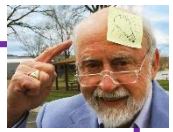
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